34008US

IN THE UNITED STATED PATENT AND TRADEMARK OFFICE

In re Application of: Joseph B. Cross, Glenn W. Dodwell, Ed L. Sughrue, and Marvin M. Johnson

For: PROCESS FOR THE REMOVAL OF HEAVY METAL FROM GASES, AND COMPOSITIONS THEREFOR AND THEREWITH

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attached hereto for filing in the United Stated Patent and Trademark Office is the patent application identified above. This application includes an executed assignment and 0 sheet(s) of drawings.

The filing fee has been computed as follows:

Basic Fee	$770.00
Additional Fees: Total Number of claims (whether independent or dependent over 20, times 18.00	1,494.00
Number of independent claims over 3, times $86.00	258.00
Multiple Dependent Claims ($290)	0.00
TOTAL Filing Fee	2,522.00

Please charge Deposit Account 16-1575 in the amount of the total filing fee stated above. The Commissioner is hereby authorized to charge any additional fees which may be required under 37 CFR 1.16 or 37 CFR 1.17, or credit any overpayment, to Deposit Account 16-1575, but is not authorized to charge any fee provided for under 37 CFR 1.18.

If the Examiner wishes to contact representatives of record concerning the accompanying application prior to the first Official Action, such contact should be made with the undersigned.

The following references, a copy of each is attached, are called to the Examiner's attention:

Article entitled "SCR Catalyst Improvements" found on the internet at www.netl.doe.gov/publications/proceedings/99/99scr-sncr/enevolds.pdf which discloses the use of a vanadium and tungsten DNX catalyst for the removal of NO_x from flue gas.

Article entitled "Special Report: Emissions Control; Emissions – Control technologies continue to clear the air", POWER Magazine, May/June 2002, found on the internet at http://www.platts.com/engineering/issues/Power/0205/0205pwr_sr-emissions.shtml and by Robert Swanekamp, discloses, among other things, various processes including the use of activated carbon for the removal of mercury from power plant emissions.

A Project Fact Sheet entitled "SNOX™ Flue Gas Cleaning Demonstration Project", DOE found on the internet at http://www.lanl.gov/projects/cctc/factsheets/snox/snoxtmdemo.html and by Paul Yosick, discloses a process for catalystically removing SO_2 and NO_x from flue gas.

Research Disclosure – December 1998/1569, No. 41604, disclosed by Shell International BV, discloses that the catalysts, as defined in EP-A 0 768 110, are also particularly effective in the removal of mercury from gaseous mixtures.

European Patent Application 0 768 110 A1, published April 16, 1997, Boxhoorn et al., discloses a catalyst comprising a titania carrier and one or more metal compounds which metals are selected from the group consisting of vanadium, molybdenum and tungsten, a process for preparing such catalyst and a process for selectively converting nitrogen oxide compounds with the help of such catalyst.

U.S. Patent 4,769,477, Bergna, September 6, 1988, discloses highly attrition resistant catalysts, catalyst precursors and catalyst supports and processes for making and using them.

U.S. Patent 4,814,317, Saleh et al., March 21, 1989, discloses a process for preparing a vanadium-containing catalyst.

U.S. Patent 4,835,126, Wachs et al., May 30, 1989, discloses a process for preparing a vanadium-containing catalyst.

U.S. Patent 4,874,525, Markovs, October 17, 1989, discloses the purification of fluid streams and more particularly the removal of mercury vapor from gas streams such as natural gas, hyrodgen or cracked gas by means of adsorbing the mercury, and optionally other impurity constituents of the fluid stream, by passage through a bed of adsorbent particles.

U.S. Patent 4,940,686, Tooley et al., July 10, 1990, discloses a composition which comprises at least one vanadium oxide as support material, platinum metal, and iron oxide and/or metal.

U.S. Patent 5,139,756, Shikada et al., August 18, 1992, discloses a process for decomposing ammonia recovered from coke oven gas through catalytic oxidation in the presence of oxygen gas, which comprises contacting a catalyst containing at least copper oxide or vanadium oxide in a fluidized state with the ammonia vapor.

U.S. Patent 5,354,357, Markovs et al., October 11, 1994, discloses the purification of fluid streams and more particularly the removal of mercury entrained in liquid streams or mercury vapor from gas streams, such as natural gas, by means of adsorbing the mercury using an integrated system of a principle regenerated fixed adsorbent bed and a secondary non-regenerated fixed adsorbent bed.

U.S. Patent 5, 409,522, Durham et al., April 25, 1995, discloses an apparatus and process for removing particulate material and mercury-containing compounds from a gas stream, and further discloses that the mercury collection means is positioned downstream of the particulate removal means and includes a regenerable sorbent.

U.S. Patent 5,607,496, Brooks, March 4, 1997, discloses a method and apparatus for removing, from a combustion gas stream, elemental mercury and mercury compounds, and further discloses that at least most of the elemental mercury in the combustion gas stream is oxidized to form mercury compounds (e.g. mercuric chloride) and catalysts are employed to promote the oxidation process.

U.S. Patent 6,027,697, Kurihara et al., February 22, 2000, discloses a method for treating a combustion exhaust gas from a waste burning facility wherein the exhaust gas is freed of dust in a dry dust collector, passed through a dioxin and NO_x removing unit using a vanadiumn oxide-based catalyst and, thereafter, the exhaust gas is further passed through a heat exchanger to effect heat recovery.

U.S. Patent 6,248,217, Biswas et.al., June 19, 2001, discloses a process for forming a sorbent-metal complex.

U.S. Patent 6,350,918, Wachs et al., February 26, 2002, discloses preparing an aldehyde from an alcohol by contacting the alcohol in the presence of oxygen with a catalyst prepared by contacting an intimate mixture containing metal oxide support particles and particles of a catalytically active metal oxide from groups VA, VIA, or VIIA, with a gaseous stream containing an alcohol.

Respectfully submitted,
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Date of Deposit: December 12, 2003

I hereby certify that this fee letter is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated and is addressed to the Commissioner for Patents, Alexandria, VA 22313-1450, on

December 12, 2003
(Date)

Jeffrey R. Anderson
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Sir:

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